



Crops and Soils

Winter Manure Application Considerations

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Winter manure application is probably the most sensitive nutrient management issue that farmers face.

Many outside of agriculture feel that it should be completely banned. We all know that winter is not the best time to apply manure and should be our last choice. But the reality is that on many of our farms there are no other practical options.

The golden rule of nutrient application is to apply nutrients as close to the time of crop uptake as practical. Following this rule will result in the best crop nutrient uptake efficiency and lowest potential for environmental impact from nutrients. With fertilizers we have the flexibility to apply these in a much more timely fashion to achieve high nutrient use efficiency. This is why we recommend against winter application of fertilizer. In some case phosphorus and potassium may be applied in the late winter on frozen ground to minimize compaction. If this is necessary, it should be done as late as possible. Nitrogen may be applied in late winter for small grains, but again as late as possible, and N fertilizer should not be applied in the winter for corn. With manure there is usually much less flexibility. Storages get full and it takes a lot longer to spread manure than fertilizer, which must be taken into account when deciding when to start spreading.

If winter manure applications are necessary, we really need to bend over backwards to do the best possible job of applying if we want to continue to have this as an option. This means making an extra effort to try to select the best fields and timing of application to minimize the potential for loss, and thus maximize the nutrients that will be available for crop uptake. Also, we need to be aware of public perception and think about how people might view a winter application on a given field.

- Select fields with cover crops or at least good residue.
 - Regulations require a cover crop or at least 25% residue for winter spreading.
- Stay as far away from water as practical.

- Regulations require staying 100 ft from water in the winter.
- Select the most level fields available and especially avoid significant slopes.
 - Regulations prohibit manure application on slopes greater than 15%.
- Avoid spreading high rates of manure in the winter.
 - Regulations limit winter manure applications to the following:
 - No more than 5000 gal/A of liquid manure.
 - No more than 20 ton/A of dry non-poultry manure.
 - No more than 3 tons/A poultry manure.
- Avoid areas in fields where concentrated water flow is likely.
- Avoid poorly drained fields.
- Don't spread on snow unless it is unavoidable.
- Try to avoid spreading when rain or melting conditions are expected.
- Stay away from roads and don't spread in road ditches.
- For daily spreading, mark where you stop spreading in case fresh snow covers up the previous application to avoid skips and overlaps.

Note that from a regulatory point of view, winter is defined as: December 15 through February 28; OR anytime the ground is frozen at least 4 inches; OR anytime the ground is snow covered.

All farms that apply manure in Pennsylvania must have a manure management plan. High density farms (CAOs) and farms with large numbers of animals (CAFOs) must have an approved Nutrient Management Plan. All other farms that apply manure must have a [Manure Management Plan \[http://panutrientmgmt.cas.psu.edu/pdf/mmp/Land%20Application%20of%20Manure%202011-10.pdf\]](http://panutrientmgmt.cas.psu.edu/pdf/mmp/Land%20Application%20of%20Manure%202011-10.pdf) (MMP) based on the DEP Manure Management Manual. An MMP that meets these regulations includes special considerations for winter application of manure that are included in the list of management practices above.

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